

Interview Summary

Application No.

09/160,991

Applicant(s)

CHERNG ET AL.

Examiner

Hwei-Siu C. Payer

Art Unit

3724

All participants (applicant, applicant's representative, PTO personnel):

(1) Hwei-Siu C. Payer.

(3) _____.

(2) Kristi L. Davidson.

(4) _____.

Date of Interview: 04 February 2002.

Type: a) ☐ Telephonic b) ☐ Video Conference

c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: _____.

Claim(s) discussed: 1, 21 and 28.

Identification of prior art discussed: Brown et al. (U.S. Patent No. 4,323,756).

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: It is agreed the specification will be amended to provide support for the limitation "while heating said area" (in claim 1 or in the original claim 10). As to claim 21, it appears whether the material feeder is a side feeder or coaxial feeder is a matter of preference (see page 10 of the specification). The preheating step as in claim 28 has no support from the original specification. It's agreed claim 28 will be deleted.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

i) ☐ It is not necessary for applicant to provide a separate record of the substance of the interview (if box is checked).

Unless the paragraph above has been checked, THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Hwei-Siu Payer
Primary Examiner



Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case unless both applicant and examiner agree that the examiner will record same. Where the examiner agrees to record the substance of the interview, or when it is adequately recorded on the Form or in an attachment to the Form, the examiner should check the appropriate box at the bottom of the Form which informs the applicant that the submission of a separate record of the substance of the interview as a supplement to the Form is not required.

It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

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PATENT, TRADEMARK, COPYRIGHT
 AND UNFAIR COMPETITION LAW
 AND RELATED LITIGATION

EDMUND P. WOOD 1923-1988
 TRUMAN A. HERRON 1935-1976
 EDWARD B. EVANS 1936-1971

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January 29, 2002

FACSIMILE COVER SHEET

To: Examiner Payer

From: Kristi L. Davidson, Esq. 

Fax: 703-305-9835

Re: Our File: BERL-18A
 Serial No. 09/160,991

Pages: 9 (including cover sheet)

MESSAGE/COMMENTS

INFORMAL SUBMISSION:
PROPOSED AMENDMENT

PLEASE DELIVER TO EXAMINER
HWEI-SIU PAYER

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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1. (Twice Amended) A method of forming a cutting die including a die body and an integral blade extending outwardly from a surface of said die body, the method comprising the steps of:

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cladding a blade material onto an area of said die body surface by heating said area with a laser, introducing said blade material into the heated area while heating said area, and building a blade of said blade material outwardly from said surface, wherein said blade material is compositionally different and of greater hardness than a base material forming said die body surface; and

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shaping the cladded blade.

2. (Twice Amended) A method as in claim 1 wherein said cladding step includes:

heating said area of said die body surface; and

introducing said blade material into the heated area while heating said area and building said blade of said blade material outwardly from said surface in a single pass of said laser.

3. (Twice Amended) A method as in claim 1 wherein the die body surface is cylindrical and including heating said area with said laser and introducing said blade material into the heated area while heating said area to completely build said blade on said cylindrical die body surface.

4. (Twice Amended) A method as in claim 1 including introducing cladding powder comprising a carbide into the heated area while heating said area for building said blade.

5. A method as in claim 1 wherein said shaping step includes shaping said blade by electrical discharge machining.

6. A method as in claim 1 wherein said shaping step includes shaping said blade by milling.

7. A method as in claim 1 wherein said shaping step includes shaping said blade by grinding.

8. A method as in claim 1 including the further step of heat treating said blade.

9. A method as in claim 1 including the further step of cryogenic treating said blade.

10. A method as in claim 1 wherein said cladding step includes:

scanning a laser beam along said die body surface comprising a low grade material of less than about 60 Rockwell C hardness, in a path corresponding to a desired blade pattern;

melting said die surface along said path; and

introducing a carbide-containing high grade material of at least about 60 Rockwell C hardness into said path while heating said path to build up a die blade in said pattern.

11. A method as in claim 10 including heat treating said die blade after said shaping to harden said die blade.

12. A method as in claim 1 wherein said introducing step includes introducing cladding powder selected from the group consisting of D2 steel, CMP10V steel, CMP15V steel and a nickel based superalloy with 30-40% volume fraction tungsten carbide.

13. A process for producing a cutting die having a metal base which carries a sharpened ridge extending along a predetermined path thereon, said ridge being of a composition distinct from said base, comprising the steps of,

- a) moving a laser beam along said path to heat the metal base and simultaneously supplying powdered metal having a composition distinct from said base to said predetermined path via a tube moving concurrently with said laser beam so that said laser beam melts a thin layer of the metal base along said path and also melts the metal powder being delivered to the base and thus forms a band of fused metal powder along said path,
- b) repeating steps a) so as to heat and melt a thin layer of the previously deposited metal along with additional metal powder to form an additional layer metallurgically bonded to the first layer, and

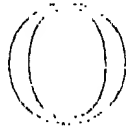
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- c) repeating step b) to produce multiple layers until a ridge of metal is formed along said path, said ridge having a substantially uniform height and width, and
- d) sharpening the ridge so formed to suit it for use in cutting.

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A process according to claim 13, wherein the metal base is cylindrical, the process including rotating the base to provide one component of relative motion between said base and said laser beam.



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A process according to claim 13, wherein after said sharpening step, said ridge is heat treated using heat from said laser beam.

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A process for producing a cutting die having a metal base which carries a sharpened ridge extending along a predetermined path thereon, said ridge being of a composition distinct from said base, comprising the steps of;

- a) moving a laser beam along said path to heat the metal base and simultaneously supplying powdered metal having a composition distinct from said base to said predetermined path via a tube moving concurrently with said laser beam so that said laser beam melts a thin layer of the metal base along said path and also melts the metal powder being delivered to the base and thus forms a band of fused metal powder along said path,

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b) repeating steps a) so as to heat and melt a thin layer of the previously deposited metal along with additional metal powder to form an additional layer metallurgically bonded to the first layer, and

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c) repeating step b) to produce multiple layers until a ridge of metal is formed along said path, and

d) sharpening the ridge so formed to suit it for use in cutting.

17. (Amended) A process for forming a cutting die comprising the steps of:

cladding a blade material onto a die surface of a material different than said blade material to form a blade extending outwardly from said surface, said cladding step including the steps of heating an area of said die surface, and introducing blade material into the heated area while heating said area and building a blade of said different blade material outwardly from said surface; and

shaping the cladded blade.

18. (Amended) A process for forming a cutting die comprising the steps of:

cladding a blade material onto a die surface to form a blade extending outwardly from said surface, said cladding step including the steps of heating an area of said die surface, and introducing blade material into the heated area while heating said area in at least two layers and building a blade of said material outwardly from said surface; and

shaping the cladded blade.

19. The process of claim 18, wherein the die surface is made of a material different than the blade material clad thereon.

20. (Twice Amended) A method of forming a cutting die including a die body and an integral blade extending outwardly from a surface of said die body, the method comprising the steps of:

cladding a blade material onto an area of said die body surface by heating said area with a laser, and by depositing said blade material into the heated area while heating said area in multiple successive layers to form a blade extending outwardly from said surface, wherein said blade material is compositionally different and of greater hardness than a base material forming said die body surface and wherein said blade has a hardness equivalent to the final desired hardness of said blade; and

after said cladding step, shaping the cladded blade.

21. (Twice Amended) A method of forming a cutting die comprising the steps of:

depositing a carbide-containing blade material in multiple successive layers onto a cylindrical die surface by laser cladding with a material feeder coaxial with a laser beam to form a cladded blade extending outwardly from said surface, wherein said blade material is compositionally different and of greater hardness than a base material forming said die surface; and

after said depositing step, shaping the cladded blade.

22. (Twice Amended) A method of forming a cutting die comprising the steps of:

heating an area of a cylindrical die surface in a path corresponding to a desired blade pattern including intersecting blades;

depositing a layer of blade material into said path while heating said area by laser cladding, wherein said blade material is compositionally different and of greater hardness than a base material forming said die surface;

repeating the step of depositing blade material onto a preceding layer of blade material until a blade of desired thickness is formed extending outwardly from said surface in said pattern; and

after said blade of desired thickness is formed, shaping the blade.

24. (Twice Amended) A method as in claim 22 including heating said area with said laser and introducing a carbide-containing blade material into the heated area while heating said area and building a blade having a hardness equivalent to the final desired hardness of said blade.

25. A method as in claim 22 including a further step of heat treating said blade after said shaping.

26. A method as in claim 22 including a further step of cryogenic treating said blade after said shaping.

27. A method as in claim 22 wherein said depositing steps include:

scanning a laser beam along said die surface comprising a low grade material of less than 60 Rockwell C hardness, in the path corresponding to the desired blade pattern;

melting said die surface along said path; and

introducing a carbide containing high grade material of at least 60 Rockwell C hardness into said path while heating said path and repeating the scanning along said path to build up a die blade in said pattern.

cancel 28. (Amended) The method as in claim 1 [wherein heating of] further comprising pre-heating said area [is] prior to said [introducing said blade material] cladding.

no support from the spec.

29. The method as in claim 1 wherein building said blade is in a pattern including intersecting portions.

30. (New) The method as in claim 1 wherein said introducing step includes feeding said blade material by a feeder coaxial with a beam of said laser to heat said blade material while heating said area.

*** RX REPORT ***

RECEPTION OK

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